

Name_____

Saltine-Amylase Lab

Testable Questions:

1. What happens to the **flavor** of a Saltine cracker when it is not chewed?
2. What happens to the **texture** of a Saltine cracker when it is not chewed?

Independent Variable (what I'm changing):_____

Dependent Variables: (what I'm measuring):_____

Hypothesis #1: If the cracker is not chewed **then** the flavor will _____

Hypothesis #2: If _____ then the texture will _____

Materials:

One saltine cracker

1 Stopwatch

Procedure:

1. Break the saltine cracker in half--- DO NOT EAT THE ENTIRE CRACKER AT ONCE
2. Chew and swallow half of the saltine cracker and record observations on the texture and flavor of the cracker
3. Wait 3 minutes
4. Place the other half of the saltine cracker in the mouth and hold for 3 minutes without chewing or swallowing and record observations

Data:

<u>CHEWED</u>	
<u>Texture</u>	<u>Flavor</u>

<u>NOT CHEWED</u>	
<u>Texture</u>	<u>Flavor</u>

Analysis Questions:

1. How was the cracker able to breakdown in your mouth without you chewing it?
2. Why did the taste change from salty (when you chewed it) to sweet (when you did not chew it)?--- If this didn't happen for you still explain why this SHOULD have happened.

3. The two graphs to the right show the results of an experiment where a saltine cracker was placed in a test tube with saliva. Graph A shows the change in starch over time. Graph B shows the change in glucose over time. Using the graphs answer questions 3A & 3B.

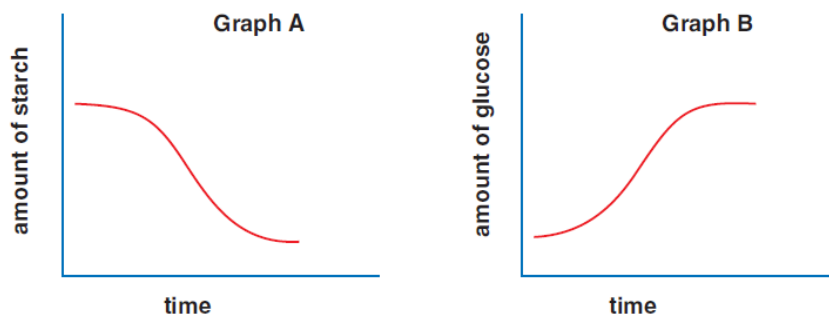


Figure 7.5 Changes in nutrient content across time. Graph A shows the changes in the amount of starch across time. Graph B shows the changes in the amount of glucose across time.

3A: Explain what is happening to the **amount** of starch OVER TIME and why that is happening.

3B: Explain what is happening to the **amount** of glucose OVER TIME and why that is happening.

Read the essay on pp. 376-336 to answer the following questions:

1. What are **two** reasons why you chew food (p. 376)?

2. What is the function of an enzyme (p. 377)?

3. Complete the following table using Figure 7.23 on p. 377.

Macromolecule	What enzyme breaks it down?	What does it break it down into?	Where does the breakdown happen?
Carbohydrate			
Lipid			
Protein			

4. Hydrochloric acid (HCl) is a very concentrated acid present in the stomach. Although it is very strong, why doesn't it damage the inside lining of the stomach (p. 378)?

5. The function of the small intestine is to finish breaking down nutrients and absorbing them into the bloodstream. Which molecules are small enough to be absorbed (p. 378)?

Post Lab:

Read pp. 376-379 in your BSCS textbook and answer the following questions in **complete sentences**.

1. Create a flowchart of the digestive system. Trace the path that the nutrients in a cheeseburger would take from being eaten to being absorbed into the bloodstream.
2. Alongside your flowchart, write break down or absorption at each step according to which process occurs at that stage of digestion.

